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5 The invention relates to a method of determining parameters of formations through which a borehole passes, on the basis of a resistivity log (20) recorded in said borehole by means of a measuring and recording tool, the method comprising the steps consisting in determining said formation parameters by a parameter inversion method so as to obtain a model of the formations; calculating the response of said tool to said model; using a comparison criterion for comparing said calculated response with said recorded log; and performing at least one new iteration if said comparison criterion is

10 not satisfied; the method being characterized by the fact that the inversion is performed by a quasi-Newton method implemented on pseudo-parameters that are homogeneous and that are determined from said formation parameters.